Fine Water Mist Fire Extinguisher for Spacecraft, Phase II

Completed Technology Project (2006 - 2008)

Project Introduction

This three phase SBIR project from ADA Technologies Inc. (ADA) builds upon the experience of ADA in development of fine water mist (FWM) fire suppression technology. ADA has subcontracted Colorado School of Mines (CSM) to provide expertise in fire scenarios in NASA's spacecraft; Spraying Systems for their expertise nozzle development, optimization, testing, and commercial manufacturing; and Pacific Scientific HTL Kin-Tech Division as a commercialization partner with expertise in flight qualified hardware. This team will work to develop the FWM fire extinguisher which was proven to extinguish fires in phase I. FWM is a proven fire suppression technology with the ability to extinguish large fuel fed fires, as well as, small electrical fires. Unlike sprinkler water systems it does not damage structures, and unlike CO2 or Halon fire extinguishers it has only inert chemicals water and nitrogen, so it is not a health hazard, environmental hazard and easily scrubbed from the air with dehumidifiers when used in spacecraft. This new extinguisher's innovative design has the capability to discharge in any orientation, and has been dubbed the Universal Discharge Orientation System (UDOS). During Phase I the UDOS system was capable of extinguishing fires in both normal vertical positions as well as upside down. During the Phase II efforts the system will be evaluated to extinguish fires in any 360 degree orientation. The ultimate objective of this project is to develop a FWM fire extinguisher which can be commercially manufactured and is capable of extinguishing both large open fires and enclosed electrical fires with minimal water usage.

Primary U.S. Work Locations and Key Partners

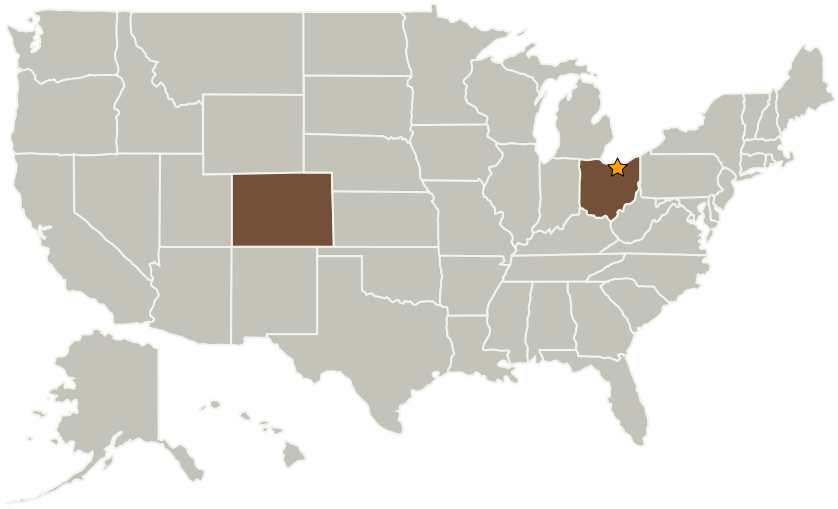

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Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
ADA Technologies, Inc.	Supporting Organization	Industry	Littleton, Colorado

Primary U.S. Work Locations	
Colorado	Ohio

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.4 Environmental Monitoring, Safety, and Emergency Response
    - TX06.4.2 Fire: Detection, Suppression, and Recovery